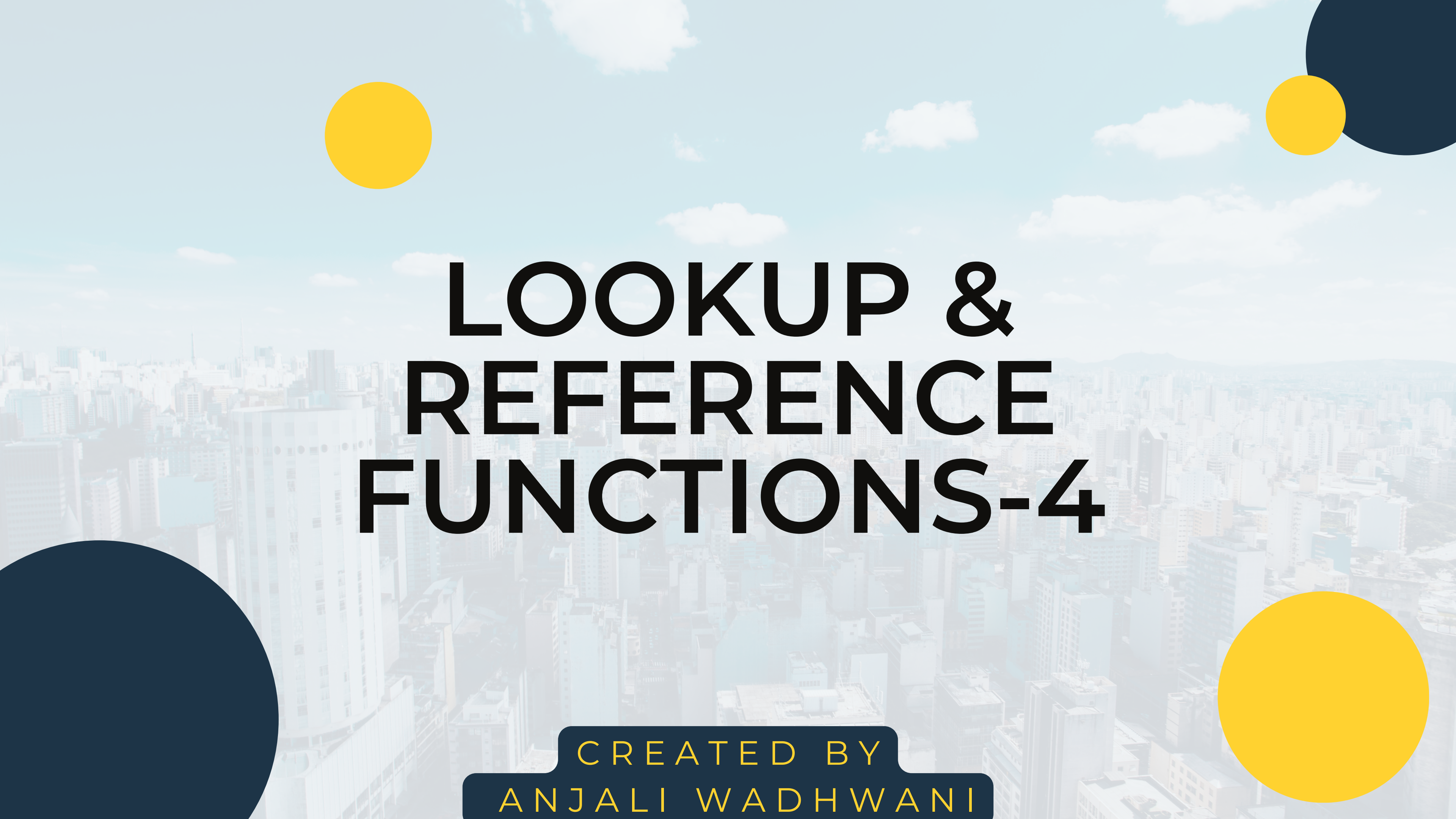




LOOKUP & REFERENCE FUNCTIONS-4

CREATED BY
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XLOOKUP

=XLOOKUP(LOOKUP_VALUE, LOOKUP_ARRAY, RETURN_ARRAY, [IF_NOT_FOUND], [MATCH_MODE], [SEARCH_MODE])

- lookup_value – What is the value we are looking for?
- lookup_array – Where should we lookup our value?
- return_array – From where should the corresponding value be returned? This could be a column, row or even a range – Meaning we can return more than one cell per match.

- [if_not_found] – optional argument – What to return in case the value is not found. We can type a value, text (for example: “Value not found!” or even use a cell reference/function.
- [match_mode] – optional argument – XLOOKUP has multiple match modes
- 0 – Exact Match – Return the exact match – This is the default option.
- -1 – Return the next smallest item, if the value was not found.
- 1 – Return the next largest item, if the value was not found.
- 2 – Wildcard match, using the ?, * and ~ signs.

- [search_mode] – optional argument – Which search mode should be used:
- 1 – Search the array from first to last (For example, in a column – Search from top to bottom) – this is the default option.
- -1 – Search from the last item to the first item in the array (For example, search bottom to top in a column).
- Also, we can perform Binary Searches using the Binary Search algorithm:
- 2 – Binary search in ascending order – Make sure that lookup_array is sorted in ascending order in order to get correct results.
- -2 – Binary search in descending order – Make sure that lookup_array is sorted in descending order in order to get correct results.

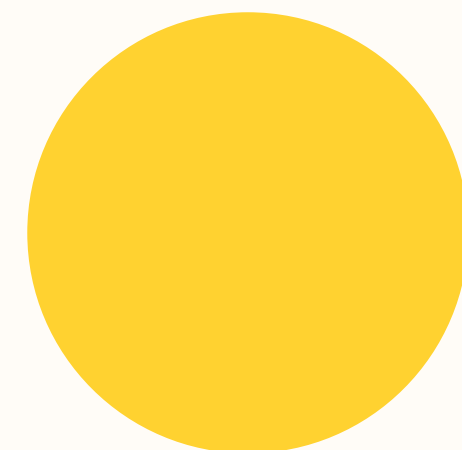
Basic Xlookup

	A	B	C	D	E	
1						
2		ID	Name	Department	Salary	
3		205	John	Accounts	34000	
4		206	Simi	Sales	30000	
5		207	Tim	IT	40000	
6		208	Robin	IT	40000	
7		209	Mary	Accounts	34000	
8		210	Sophie	Sales	30000	
9		211	Mike	IT	40000	
10						
11						
12		ID	Department			
13		206	Sales			
14						

FORMULA REPRESENTATION

	A	B	C	D	E
1					
2		ID	Name	Department	Salary
3		205	John	Accounts	34000
4		206	Simi	Sales	30000
5		207	Tim	IT	40000
6		208	Robin	IT	40000
7		209	Mary	Accounts	34000
8		210	Sophie	Sales	30000
9		211	Mike	IT	40000
10					
11					
12		ID	Department		
13		206	=XLOOKUP(B13,B3:B9,D3:D9)		
14					

B13- lookup_value
B3:B9- lookup_array
D3:D9- return_array

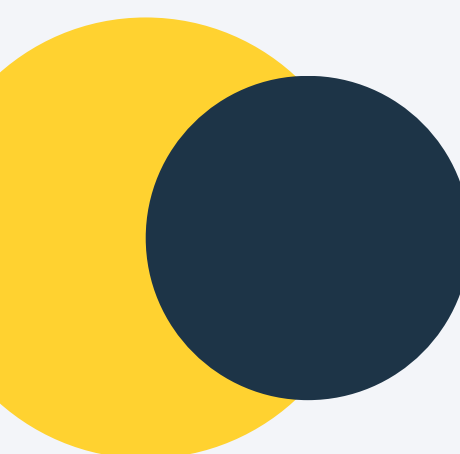


search mode

	A	B	C	D	E	
1						
2		ID	Name	Department	Salary	
3		205	John	Accounts	34000	
4		206	Simi	Sales	30000	
5		207	Tim	IT	40000	
6		208	John	IT	40000	
7		209	Mary	Accounts	34000	
8		210	Sophie	Sales	30000	
9		211	Mike	IT	40000	
10						
11		Name	Department			
12		John	Accounts	#search mode 1		
13						
14		Name	Department			
15		John	IT	#search mode -1		
16						



**Search mode 1 started looking from the top
and gave the result of first found i.e., Accounts
match whereas -1 started looking from the
bottom and gave department as IT.**



FORMULA REPRESENTATION

	A	B	C	D	E	
1						
2		ID	Name	Department	Salary	
3		205	John	Accounts	34000	
4		206	Simi	Sales	30000	
5		207	Tim	IT	40000	
6		208	John	IT	40000	
7		209	Mary	Accounts	34000	
8		210	Sophie	Sales	30000	
9		211	Mike	IT	40000	
10						
11		Name	Department			
12		John	=XLOOKUP(B12,C3:C9,D3:D9,,,1)	#search mode 1		
13						
14		Name	Department			
15		John	=XLOOKUP(B15,C3:C9,D3:D9,,, -1)	#search mode -1		
16						

One more amazing feature of XLOOKUP is its ability to return more than one value relating to the same match. All is done with the standard syntax and without any extra manipulations!

You enter the formula in the required cell of the results range, and Excel automatically spills the results into adjacent blank cells.

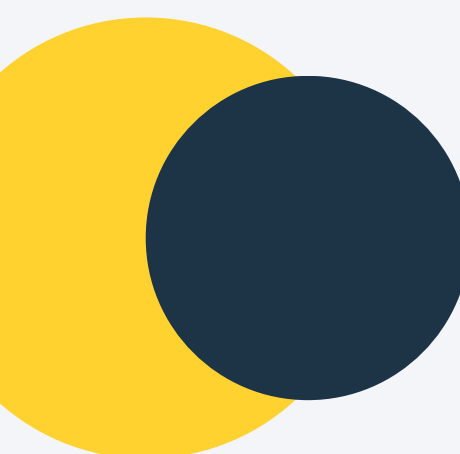
	A	B	C	D	E	
1						
2		ID	Name	Department	Salary	
3		205	John	Accounts	34000	
4		206	Simi	Sales	30000	
5		207	Tim	IT	40000	
6		208	John	IT	40000	
7		209	Mary	Accounts	34000	
8		210	Sophie	Sales	30000	
9		211	Mike	IT	40000	
10						
11						
12		ID	Name	Department	Salary	
13		210	Sophie	Sales	30000	
14						

FORMULA REPRESENTATION

	A	B	C	D	E	
1						
2		ID	Name	Department	Salary	
3		205	John	Accounts	34000	
4		206	Simi	Sales	30000	
5		207	Tim	IT	40000	
6		208	John	IT	40000	
7		209	Mary	Accounts	34000	
8		210	Sophie	Sales	30000	
9		211	Mike	IT	40000	
10						
11						
12		ID	Name	Department	Salary	
13		210	=XLOOKUP(B13,B3:B9,C3:E9)			
14						



When the lookup value is not found, Excel XLOOKUP returns an #N/A error. Quite familiar and understandable to expert users, it might be rather confusing for novices. To replace the standard error notation with a user-friendly message, type your own text into the 4th argument named `if_not_found`.



Not found value

	A	B	C	D	E
1					
2		ID	Name	Department	Salary
3		205	John	Accounts	34000
4		206	Simi	Sales	30000
5		207	Tim	IT	40000
6		208	John	IT	40000
7		209	Mary	Accounts	34000
8		210	Sophie	Sales	30000
9		211	Mike	IT	40000
10					
11					
12		Name	Department		
13		Sam	Not in database		
14					

FORMULA REPRESENTATION

	A	B	C	D	E
1					
2		ID	Name	Department	Salary
3		205	John	Accounts	34000
4		206	Simi	Sales	30000
5		207	Tim	IT	40000
6		208	John	IT	40000
7		209	Mary	Accounts	34000
8		210	Sophie	Sales	30000
9		211	Mike	IT	40000
10					
11					
12		Name	Department		
13		Sam	=XLOOKUP(B13,C3:C9,D3:D9,"Not in database")		
14					

To perform an approximate lookup, set the `match_mode` argument to either -1 or 1, depending on how your data is organized.

Tip. When copying an Xlookup formula to multiple cells, lock the lookup or return ranges with absolute cell references (like `$B$2:$B$6`) to prevent them from changing.

	A	B	C	D	E	F	G	
1								
2		Rating	Grade		Name	Rating	Grade	
3		5	A ⁺		Sophie	2.3	C	
4		4	A		John	2.5	C	
5		3	B		Mike	3	B	
6		2	C		John	3.5	B	
7		1	D		Simi	4	A	
8					Tim	4	A	
9					Mary	5	A+	
10								

FORMULA REPRESENTATION

	A	B	C	D	E	F	G
1							
2		Rating	Grade		Name	Rating	Grade
3		5	A ⁺		Sophie	2.3	=XLOOKUP(F3,\$B\$3:\$B\$7,\$C\$3:\$C\$7,-1,)
4		4	A		John	2.5	=XLOOKUP(F4,\$B\$3:\$B\$7,\$C\$3:\$C\$7,-1,)
5		3	B		Mike	3	=XLOOKUP(F5,\$B\$3:\$B\$7,\$C\$3:\$C\$7,-1,)
6		2	C		John	3.5	=XLOOKUP(F6,\$B\$3:\$B\$7,\$C\$3:\$C\$7,-1,)
7		1	D		Simi	4	=XLOOKUP(F7,\$B\$3:\$B\$7,\$C\$3:\$C\$7,-1,)
8					Tim	4	=XLOOKUP(F8,\$B\$3:\$B\$7,\$C\$3:\$C\$7,-1,)
9					Mary	5	=XLOOKUP(F9,\$B\$3:\$B\$7,\$C\$3:\$C\$7,-1,)
10							

XLOOKUP

V/S

VLOOKUP

- 
- XLOOKUP is considered better than VLOOKUP in many ways because it offers more capabilities and is more flexible. Here are some reasons why:
 - Two-way lookup: XLOOKUP can perform two-way lookups, meaning it can search both horizontally and vertically. In contrast, VLOOKUP can only search vertically.
 - Exact match not required: XLOOKUP can perform both exact and approximate matches, while VLOOKUP can only do exact matches. This means that XLOOKUP can handle situations where the lookup value is not exactly the same as the value in the lookup array.
- 

- No need to count columns: With XLOOKUP, you don't need to count columns to determine which column to return the value from. Instead, you specify the return array separately.
- Handles errors better: XLOOKUP returns a #N/A error if the lookup value is not found, which is more intuitive and easier to handle than VLOOKUP's #N/A error.
- Optional arguments: XLOOKUP allows you to specify optional arguments, such as the ability to search from the beginning or in any order. This makes the function more flexible and customizable.

Thank
you!

"A problem is a chance for
you to do your best." —
Duke Ellington